VOL. 1. NO. 6. MARCH 17, 1904

THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

## A CRITICISM OF SCIENTIFIC METHOD AS APPLIED BY SOCIOLOGISTS.

IN the October-December number of *The Forum,* in an article entitled 'Sociological Questions,' Professor Giddings feels the need of first explaining "the sense in which the word 'sociological' " is used. The explanation crystallizes in two definitions, viz.: "Sociology is, in short, a study of those fundamental social facts which all other branches of social science take for granted." "Sociology is an attempt to get away from *a priori* theorizing, and to arrive at knowledge, even though the knowledge be of a modest sort, falling short of philosophy."

There are two phrases in these statements that are worth noting before passing to a discussion of the larger principle that is involved.

In the first place, from the view-point of either science or philosophy, using those terms in a liberal sense, there is no 'knowledge' which is 'of a modest sort.' Knowledge that is knowledge is neither modest nor boastful—it is simply the means, it is simply the intellectual instrument, for the furthering of our ends. It is the servant which is at once master and servant; and we fail to see the purport of this apologetic tone in defining the scope and method of sociology which stands, in the Comtean scheme, for the correlation and climax of all the sciences.

Again, and without any intention of being captious in our criticism, there can be no[1] '*arriving* at knowledge without *a priori* theorizing,' for there can be no arriving except there be a starting, and '*a priori* theorizing,' however distasteful the phrase may be, if it means anything, simply locates the initiative, it means in psychological terms the intellectual impulse to thinking, which, in order to realize itself, does go out and then return to itself by way of the fact. If the impulse is *a priori,* is blind, so likewise is the fact; they are both blind until each has been defined by the other in a dynamic

[1] Italics are ours.

situation. The one simply defines the other, and any complete intellectual act is simply the biological, the organic, method of defining them. Facts are not found ready-made in objective concreteness, nor are theories and principles spun out of *a priori* minds. Facts and theories are not objective, in the sense of existing in external unrelatedness, and do not exist as such. It is always some fact or group of facts which defines and shapes a theory, and it is always a theory which gives meaning to facts.

The failure to comprehend this essentially dynamic character of method at the outset, by sociologists, has diverted some of the leading minds that are interested in establishing the new science, as a science, from the formulation of fundamental principles to a voluminous discussion of logic under the guise of the scientific term, methodology.

Nor does the problem seem to have received any satisfactory solution. Assertions regarding the scientific method of the new science seem to have received a stereotyped place in all pretentious articles. And these assertions all have that same attitude of hostility toward the *a priori* in their reverence for the inductive and comparative and statistical methods.

Turning now to the general methodological attitude of the article which is the occasion of this writing, we find that the *a priori* method has become an *ism*, and amounts simply to 'an off-hand guess.' It is identified with 'dogmatism.' The method pleaded for is that 'scientific method which has yielded positive results in all the inductive sciences.' 'The comparative methods of the trained historian' and 'the quantitative methods of the statisticians' are to characterize the study of contemporaneous society.

In order to maintain his equilibrium in this position the author finds it necessary, at five different points in the course of his argument, to assail *a priorism* in the manner mentioned above. It strikes the tyro in sociology as exceedingly strange that the father of all science, to whom all science goes back for its initial movement, should also be the father of *a priorism*, and it does not decrease the tangle of the situation to learn that the charge of *a priorism* has been laid also at the door of one who thus asserts and reasserts his lack of confidence in that method.

Nor does it clear up the situation much when, regarding questions that are raised, the assertion is made that they 'admit of an exact statistical answer,[2] *but the answer has not been found.*'

The feeling has been expressed in scholastic circles that sociologists have not risen to their opportunity, and the writer feels that at least one of the causes of this failure can be traced on the one

[2] Italics are ours.

side to this overt adoption of the so-called scientific method, and on the other to the overt abandonment of the *a priori* method, without a careful analysis of the essentially dynamic nature and identity of all effective method. A purely mechanical conception, in spite of the profusion of organic terms, underlies this much-praised scientific method in a good deal of what has been offered as contribution to chapters of the science. Sociologists have taken up the problems of the new science from the view-point of the objective results of modern science. Method has been regarded as being just as fixed and established as facts. The latter have been conceived to be projecting themselves into the field of vision of every man who would but open his eyelids. Facts and method have been regarded as if the one were existing ready-made in nature waiting simply for appropriation, while the other has been a product of science which could be simply handed over to and applied by the social investigator.

The writer does not mean to affirm that all investigators of social facts and phenomena have gone at the problems so crudely as this arraignment might imply, nor that any one would admit that he does hold a mechanical conception of facts and methods; yet he does mean to assert that a large part of what has been said about methodology in sociology has confined itself to a reactionary assertion favoring the inductive methods of modern science and of opposition to the deductive method, without any adequate analysis of the essentially organic relation between induction and deduction in mental procedure. The writer finds, therefore, that sociologists have placed themselves in the anomalous position of affirming the dynamic and organic nature of the relations of individuals in society, while, on the side of method, they have asserted with equal vehemence the essentially inorganic, dualistic nature of mental procedure. This contradiction seems, to the writer, to have been a fundamental stricture upon progress in both the formulation of general principles and the detection of salient facts.

What, then, is the true logic of the sociological procedure? What is the essential nature of sociological method? What is the basis of the affirmation that society is an organism? Why is it coming to be regarded among sociological thinkers that the statement that individuals are simply functions of each other, is a truism? Is it not that sociological method, as all effective method, is dynamic and organic, that to grasp the essential principles of any and all relationship is to see that the elements are all functionally interdependent? And is this not just as true of the relation between fact and theory as it is between industrial principals and subordinates?

What, then, we may ask, is the significance of this divorce be-

tween fact and theory? Why are we asked to reduce the mind to a *tabula rasa,* free from all theoretical bias and presupposition, in order that it may be in perfect condition for this photographic exposure to facts?

It is not the purpose of the writer to deny the possibility of a theoretical bias which would absolutely exclude the possibility of a true perception of patent and demonstrable and even demonstrated facts. But, on the other hand, it is equally true that an abstract, mechanical conception of facts is quite as effective in its exclusion of a perfectly valid, though not universally demonstrable, working hypothesis. In other words, theory and fact are related terms. Theory is always theory *of* fact, if it is theory at all, and fact is always fact, if at all, by reason of its relation to theory.

The universe is but a storehouse of raw material, which when abstracted for some particular anthropic purpose or end is thereby transformed for mind into a fact, a means to an end. The raw material is *fact* by virtue of its psychical connection, and it remains fact so long as, and only so long as, it is connected with some psychical end. Its disconnection marks its return to the great storehouse from which it was taken. Its character as fact is defined by the end for which it was abstracted and which it served. It comes to consciousness as fact only when, from the view-point of the end, which is always and necessarily *a priori,* it proves adequate to that end; when it can serve as the means which the end has been groping for in the process of its self-realization. It serves to define the end.

Fact and theory are related in the process of experience as means to end. From the view-point of a functional psychology of experience it is possible to determine the exact nature of the methodological problem of sociologists. Both fact and theory have a negative and a positive phase in the process of knowledge.

It has been said above that fact is a mental derivative; that the affirmation of fact is possible only from the point of view of its relation to an anthropic end as means. This is its positive phase. Its negative aspect appears when it is no longer serviceable in this capacity, when it is rejected as irrelevant. This takes place either when the fact itself has been found to have been fragmentarily conceived, or when the scope of the theory has altered.

Similarly, theory exhibits a positive and negative phase. On the positive side, theory is valid to the extent that it sharply differentiates excluded from included facts. On the negative side, it is questioned when it is undergoing reconstruction, either by reason of its failure to rationalize the facts or by reason of a reconstruction of facts which necessitates a like reconstruction of theory. After all that has been said by science in affirmation of the relativity of

knowledge, it seems strange that there should persist such strenuousness in the insistence upon the positiveness of scientific method. The whole confusion seems to the writer to arise from the failure to grasp the essential meaning of the organic concept. It is a failure to see that the limiting scientific categories, just as truly as the philosophical, are functionally related. The most improved self-binder, with all the latest patents, will cut and garner weeds just as readily as wheat, but the lord of the harvest makes a distinction. The botanist may trample down the wheat to get the weed, but not so the lord of the harvest. Why does the one ignore what the other sees? Is not the weed as practically serviceable to the botanist as the wheat to the lord? Is the value in either case any more theoretical or any more practical than in the other? The economist has a ready answer.

Who has not felt, in reading some of the recent classifications of so-called sociological data, that the line has not been very carefully drawn between what has been subsumed under fact on the one hand, and under theory on the other? The affirmation and classification of data under a certain caption are not necessarily a determinative of credence in the asseveration. And have we not frequently found ourselves greatly pleased to have put into our hands data both carefully collected and arranged, while, on the other hand, there has been a revolt of feeling when the author has attempted to commit us to a certain interpretation of those facts in another relation?

Accordingly, it would seem that we have two equally necessary functions mutually supplementary; and that human nature is so constituted as to make a division of labor both possible and feasible. An old statement of the functional point of view is to the point: "The eye can not say unto the hand, I have no need of thee," etc. "Those members of the body which seem to be more feeble are necessary." Fact and theory, principle and practice, *a posteriori* and *a priori,* are psychologically but the two poles of a single act. Neither pole has any significance apart from the sphere which involves its antipode. Facts are serviceable only in relation to theory, and theory finds its meaning, its realization, only in facts. Historically, it is true that the oscillation is between the two, with the emphasis now upon the one and then upon the other. But the significance of this oscillation is not that either is to be neglected, but rather that the progress in the development of the one has proceeded at a more rapid pace than in the case of the other. The fact that attention does thus focalize now upon one and then upon the other simply indicates the method of all human progress. Man puts but one foot forward at a time.

In our search for theory the differentia of facts is reduced to a

minimum in order that their unifying principle may be determined. While, on the other hand, in our search for facts their differentiæ are carefully distinguished in order that elemental characteristics may appear. Their unifying principle is put in the background, is reduced to a minimum. But without some background, it is obvious that they would be simply unrelated and arbitrary.

The method of reason, therefore, the true logic, is simultaneously inductive and deductive. It is stereoscopic. Fact and theory, when they appear as such, appear in organic relatedness. They are vital. Until they do so appear there is neither fact nor theory. The situation is problematic.

Of the present status of the logic of the social sciences we may say, then, that it is reactionary, and not functional. In attempting to avoid the errors into which a past historical period had fallen in its state of degeneracy, the pendulum has swung to the extreme of denying any validity to a notable method once held as valid. Instead of determining its positive elements, its validity has been denied without any adequate analysis of its psychological nature. There seems to be a need for a psychology of logic.

In this connection, sociologists might find material for reflection in the statements of the experience of psychologists with the scientific method. Professor James, calling attention to the dearth of definitive results, says:

"In the light of some of the expectations that are abroad concerning the 'new psychology,' it is instructive to read the unusually candid confession of its founder, Wundt, after his thirty years of laboratory experience: . . . Well, has our experimental self-observation, so understood, already accomplished aught of importance? No general answer to this question can be given, because in the unfinished state of our science there is, even inside of the experimental lines of inquiry, no universally accepted body of psychologic doctrine."[3]

Again he says:

"In my humble opinion there *is* no 'new psychology' worthy of the name. There is nothing but the old psychology which began with Locke's time, plus a little physiology of the brain and senses and theory of evolution, and a few refinements of introspective detail."[4]

And again:

"It is indeed strange to hear people talk triumphantly of the 'New Psychology'; and write 'Histories of Psychology,' when into the real elements and forces which the word covers not the first glimpse of clear insight exists." "A string of raw facts; a little

[3] 'Talks on Psychology,' p. 20–21.

[4] Wm. James: 'Talks to Teachers,' p. 7.

gossip and wrangle about opinions; a little classification and generalization on the mere descriptive level; a strong prejudice that we *have* states of mind, and that our brain conditions them: but not a single law in the sense in which physics shows us laws, not a single proposition from which any consequence can causally be deduced. . . . The Galileo and the Lavoisier of psychology will be famous men indeed when they come, as come they some day surely will, or past successes are no index to the future. When they do come, however, the necessities of the case will make them *'metaphysical.'* Meanwhile the best way in which we can facilitate their advent is to understand how great is the darkness in which we grope, and never to forget that the *natural-science assumptions* with which we started are *provisional and revisable things.'*"[5]

From these statements it appears that the outcome of the application of scientific laboratory methods has not yielded to psychologists those definitive data which might serve even suggestively to indicate the broader fundamental principles which they had hoped would prove to be ultimate.

Principles, theories, generalizations and syntheses are recognized to be the derivatives of a different mode of approach, or, at least, of a mode of approach which involves the insight of the metaphysician. The product of scientific investigation in the form of an ever-increasing bulk of data has only brought more clearly to consciousness our utter dependence upon constructive talent for the deduction of fundamental principles. In no department of knowledge can this fact be overlooked; and this recorded experience of psychologists ought at least to be regarded as a datum in the consideration of methodological procedure.

What the sociologists are waiting for is precisely the correlating *a priori* mind which can see, by reason of its freedom from thraldom to the multitudinous details of the science, those fundamental and determinative principles which, when they shall have been formulated, will obtain general credence. The positivism of gnostics suggested the relativism of agnostics. And it may be that, similarly, the positivism of sociologists may bring about the reactionary attitude of relativism regarding sociological facts and principles, than which no more baneful position is conceivable, involving as it does the whole realm of morals.

Reverting to the second definition given by Professor Giddings, while, on the one hand, there is the explicit statement of a definite purpose to "get away from *'a priori'* theorizing," there is, on the other hand, the admission that what is sought is 'knowledge, even though of a modest sort, falling short of philosophy.'

[5] James: 'Briefer Course,' pp. 468, ff. Italics are ours.

It would seem that the '*a priori* theorizing' is the chief cornerstone whose rejection has necessitated this 'falling short of philosophy.' Until *a priori* and *a posteriori* are seen to be but names for the difference in the position of the stress in the relation of fact and theory in the process of the discovery of the truth, little progress can be hoped for in any science, and least of all in the correlation and interpretation of the confused and confusing data of sociology.

That there is a place for the *a priori* in sociology is coming more acutely to consciousness with the rapidly accumulating data gathered by a host of investigators into social facts and phenomena. And we may say, in the words of Professor James, concerning the minds that shall establish the new science, 'the necessities of the case will make them metaphysical.' The metaphysicians of the new science will, however, have profited by the progress in logical method both inductive and deductive; their attitude being characterized by its comprehensiveness and not by the deliberate exclusion of any method which has proved serviceable in reaching results.

ALBAN D. SORENSEN.

COLBY COLLEGE.

---

## DISCUSSION

### PRAGMATISM[1]

MR. F. C. S. SCHILLER, of Oxford University, continues to be at once the most pugnacious and the most facetious protagonist of pragmatism. In his preface to his latest work he chronicles what would seem to be epoch-making events in the history of this theory, viz., Professor James's clear enunciation of it in 1879 and his own later discovery (date not given) that he had been talking pragmatism as far back as 1892 without knowing it. Now he knows it and he tells us that pragmatism is the application to the theory of knowledge of a 'greater and more sovereign principle,' viz., Humanism, which Mr. Schiller knows 'to be habitual' in William James and himself, but 'which seems to be sporadic and inchoate in many others.' Since I am concerned here only with the pragmatic view of knowledge, it may suffice to say that Humanism is 'the philosophic attitude which, without wasting thought upon attempts to construct experience *a priori*, is content to take human experience as the clue to the world of human experience.'[2]

[1] 'Humanism. Philosophical Essays,' F. C. S. Schiller, pp. xxv + 297. New York, The Macmillan Co., 1903; 'Pragmatism as a Philosophic Method, Irving King, *Philosophical Review*, Vol. XII., No. 5 (Sept. 1903), pp. 510–524. See also 'Studies in Logical Theory,' John Dewey and others, Chicago, The University of Chicago Press, 1903.

[2] 'Humanism,' pp. xix–xx.

It is to remember that 'man is the measure of all things' and that 'man is the maker of the sciences which subserve his human purposes.'

Mr. Schiller's jaunty onslaughts on Kantian *apriorism,* Bradleian *absolutism* and all other forms of intellectualism are always interesting reading. But the magniloquent and extravagant claims, the 'superior' air and the confident dogmatism pall on one. These qualities of Mr. Schiller's writing, together with his repeated and often tasteless sallies of wit, tend to bring into disrepute a doctrine which deserves a more thorough and serious treatment. When the witticisms, jibes and other 'literary' flights are discounted there is left a residuum of philosophical argument and it is with this that I shall deal.

The first three essays in 'Humanism,' together with the essay on 'Axioms as Postulates' in the volume called Personal Idealism, give in outline Mr. Schiller's conception of the pragmatic theory of knowledge. In the eleventh and twelfth essays in 'Humanism' we find more explicitly stated his metaphysical views.

At the outset of the essay entitled 'Axioms as Postulates' Mr. Schiller lays down the fundamental principles of pragmatism as he conceives it. It appears that the world is not a fixed datum. The cosmos is indeterminate. Our world 'is the fruit of a long evolution,' 'a strenuous struggle.' It is plastic to our choices and responsive to our needs. Still, the world is not *wholly* indeterminate, not exactly 'my oyster.' We find out what it is by *trying.* The world is a *persisting* factor in experience. It offers *resistance* to our efforts. (This reminds one strongly of the elder Fichte's doctrine of the Non Ego as furnishing the *Anstoss* or *limit* to the activity of the Ego—something hard for the Ego to cut its wisdom teeth on.) After all, it is hinted, the universe has some rudiments of a character. If it has not a fixed *actuality* apart from human choices and efforts it seems to have some sort of vague potential constitution, *i. e.,* it offers to the self a limited though wide range of possibilities of action.

The essay entitled 'Useless Knowledge' presents a further statement of pragmatism in the form of a dialogue between Plato, Aristotle and Mr. Schiller. Here we are told that the agreement between different individuals in regard to the nature of the world is a result of *growth.* We perceive things in *practically* the same way, *i. e.,* 'when we say that several perceive the *same* things, what we really mean is that they *act* in a corresponding manner towards them.' "Thus the objectivity of our special perceptions is essentially *practical* and *useful* and *teleological.*" (Mr. Schiller might have said that the objective world is a *socially* recognized

group of perceptions—a *social possibility of sensations.*) Truth means objectivity, and, since the test of objectivity is utility or practicality, there is no distinction in kind between the truths expressed in the propositions, swans are white and $2 + 2 = 4$ or parallels never meet. The test of the truth of a conception or proposition is, Does it work? What use can we make of it? The so-called axiomatic and eternal truths are simply those which have been used so long that we have forgotten their origin and that everybody agrees to, *i. e.,* everybody *acts as if* they were true. We test the truth of a new proposition by acting as if it were true. We so act because we desire to. If the result be satisfactory we assume that the proposition *is* true.

Mr. Schiller makes room for the truth of highly abstract and apparently useless propositions, such as those of higher mathematics, by saying that these propositions are *indirectly* true. They are *true* either because they are *useful in logically completing a system of knowledge* some parts of which have proved practically useful, or, as in some cases, because their use has not been discovered and so, he seems to say, these latter propositions are true in an anticipatory sense. He does not explain why, on the premises of pragmatism, we should pay any regard at all to *logical system* as a criterion of truth. Logical system is just what the method of pragmatism ignores. And at best this case of fitting into a system only gives a secondary and derivative sort of truth. If this test fails, what are we to say of the standing of such doctrines as the theory of numbers for which not an inkling of a practical use has been glimpsed (*pace* Professor Royce's Infinite). Must we await the conversion of the number-theory into cash-value before admitting its truth, while in the meantime we are absolutely convinced of the soundness of the reasonings of Dedekind, Cantor *et al.?*

In the essay on 'Truth'[3] Mr. Schiller examines the theory that the 'true' is that which fits into a system. To this he objects, amongst other things: (1) That there are systems of falsehood; (2) that there is no complete system of truth but many partial systems; (3) against the reply that there is an ideal system into which all the partially true systems must fit he urges the arbitrariness and contingency in the construction of truth as evidence of the unreality of any absolute system of truth. Here, as in many other places, Mr. Schiller, it seems to me, *confuses the psychological or genetic conditions of truth in the making with the criterion and significance of truth as attained.* No doubt in many cases, particularly in those of our general philosophical notions, a study of gene-

[3] 'Humanism,' pp. 44–61.

sis throws light on their ultimate significance, since philosophy is the interpretation of experience, and experience grows. But I do not see, *e. g.*, how the contingent and arbitrary factor in the development of counting affects the validity of the proposition $2+2=4$.

Mr. Schiller further objects that 'System' is too poor an ideal. Truth must have *practical* and *emotional value*, and without this we do not regard a 'system' as true. We need 'system' only as a means to the higher notion of 'harmony.'[4] But there are many kinds of harmony, and is not an intellectual system a harmony *sui generis* for the mind which possesses it? I regard the number-system of algebra as true, but it has no practical value for me and, not being a mathematician, I have not discovered that it produces in me any emotional thrills. Mr. Schiller's general position is that the tests of truth are psychological and that they are primarily matters of feeling. He says that the cause of logical coherence is *interest*.[5] But *cause* and *criterion* may be wholly different. One may be intensely interested in coherences which never happen, *e. g.*, between oneself and the presidency of a university or the possession of great wealth.

Truth defined psychologically is a form of *value*.[6] When a value is sustained by experience it becomes useful. Truth is the useful, efficient, workable, 'primarily for any human end, but ultimately for that perfect harmony of our whole life which forms our final aspiration.'[7] Hence those who pursue 'useless' knowledge and possess 'useless' truth are superfluous luxuries. Whence it follows that philosophers who do not hold to and practice the pragmatic method are excrescences.

Value is an ethical category and depends on emotional and practical interests. The pragmatic doctrine of cognition is that thought is a function of action—that it is never an end-in-itself, but always a means to action or, better, an instrument for attaining a harmony of experience. So Mr. Schiller in the first essay in 'Humanism' insists strongly on the ethical basis of metaphysics. Since thought is a mode of conduct, knowledge always involves choice and responsibility. Pragmatism is 'the thorough recognition that the purposive character of mental life generally must influence and pervade also our most remotely cognitive activities.' The search for the *real* and *the true* is a search for the *good*. The good is the supreme category. Nature responds to our choices and hence is to be interpreted humanistically. Our interpretation of reality must be *quasi ethical, i. e.*, in terms of the good for persons.

[4] 'Humanism,' p. 50.
[5] 'Humanism,' p. 53.
[6] 'Humanism,' p. 54.
[7] 'Humanism,' p. 61.

It is already evident that pragmatism with Mr. Schiller has passed the stage of a tentative method for the examination of philosophical concepts and has become a dogmatic metaphysic. For in the essay 'On Preserving Appearances' pragmatism appears in the double rôle of a short and easy method with Mr. Bradley and of a source of principles to which ultimate reality must conform. In his criticism of Mr. Bradley, Mr. Schiller objects that the method of eliminating contradictions is not a final test of reality and asserts that nothing which exists can really be contradictory, although our theoretical interpretations of it may be.

Mr. Schiller proposes the conception of *harmony* as a principle or criterion of reality higher and more fruitful than that of non-contradiction. He insists that *feeling, e. g.,* in esthetic experience, often affords a solution of discursive contradictions in a harmony higher than any attainable by pure thought. He insists, further, on the *reality* of immediate experience as more fundamental than conceptual interpretations of experience, and particularly on the reality of *change* as actually given in experience. 'Ultimate reality' must really explain and harmonize our immediate experiences, not abolish nor absorb them. The test of the value of any supposed higher principle is its efficiency in making life more harmonious. It follows that ultimate reality must be *absolutely satisfactory.* We are not told to whom. Nero? or St. Anthony? The place of knowledge in ultimate reality depends on its power to promote the harmony of life. If it were true that he that increaseth knowledge always increaseth sorrow, then, says Mr. Schiller, the pursuit of knowledge would be *irrational.*

The distinction between appearance and reality, says Mr. Schiller, is one that holds *within* our own experience, and any doctrine of a transcendental reality which destroys the *values* that inhere in our immediate experiences stands self-condemned. A conception of ultimate reality should enable us to transform and enhance the meanings of our fragmentary experiences, but it must never abolish the value of these.

The twelfth essay, entitled 'Activity and Substance,' is a really good article[8] on Aristotle's doctrine of ἐνέργεια as substance. Mr. Schiller points out that Aristotle did not conceive ultimate or real activity as involving change or imperfection. It is a completely self-contained activity, a Being which has realized all its potentialities. Mr. Schiller argues for this view as satisfying our requirements for a metaphysical view. I can not discover any necessary connection between his subjectivistic and relativistic pragmatism with its apotheosis of feeling and utility and its emphasis on becom-

[8] Another good essay is that on Lotze's Monism.

ing and this conception of 'an activity which, transcending change and time, preserves itself in a harmonious equipoise.'[9]

The psychological foundation of pragmatism is, of course, the doctrine made current by Professor James, that ideas always tend to issue in action and that, in general, mental life is teleological. But in Mr. Schiller's hands pragmatism is transformed into a metaphysic which is acosmistic in tendency at least. His emphasis on the principle of harmony, on the values of immediate experience, on the place of interest, purpose and choice in the construction of knowledge, and his insistence on the principle that nature is responsive to our choices, are valuable features representative of a growing tendency in philosophic thought shared in more or less by Ward, James, Stout, Royce, and others. It has much in common with the views of Rickert, Eucken and others in Germany.

But Mr. Schiller is an extremist. He is constrained to admit the existence of a universe. But his universe seems to be so entirely the plastic tool of human need (and caprice?) that it loses all determinate character. The cosmos begins in chaos. It is not clear how and when the ordered world, which science seems to *discover not to make at will,* came into being. The stable universe which we recognize seems, according to Mr. Schiller, to be the product of a sort of 'social contract.' Did the separate and independent personal beings (the pluralistic realities) call a meeting and decide to organize a universe with constitution agreed upon by majority vote?

It is true that we organize our knowledge with reference to our needs and that thought is purposive and useful. But it is equally true that we have to organize our needs with reference to the determinate constitution and order of reality, and in this order some needs must go unsatisfied. How do we know that the evolution of the universe follows the evolution of human thought? Mr. Schiller tends to overlook this aspect of the situation. There is no place for an objective cosmic order in his system. Again, while it is true, I believe, that our lives are largely dominated by the search for *harmony,* there are various types and grades of harmony. *'L'homme sensual moyen'* seeks a harmony that will not satisfy poet or saint. He who prefers pushkin to poetry may attain a harmony as productive of personal satisfaction as the intellectual harmony sought by the philosopher. After all, is not the harmony of world-view, which, I suppose, even a pluralist and pragmatist in philosophy seeks, rather unique and self-sufficient and somewhat remote from the harmony of a 'trust' or of the 'four hundred'? There lacks a principle for evaluating harmonies. As a metaphysic, pragma-

[9] 'Humanism,' p. 227.

tism seems not to have taken due account of that determinate nature of reality which practical men recognize and science more clearly establishes. As a philosophic method, pragmatism presents a fruitful union of the genetic and teleological methods of treating knowledge. If its advocates will avoid a crassly utilitarian view of knowledge and recognize that thought is not a mere external tool of life and action, but that in its higher stages it is a unique form of spiritual life and activity—a manner of attaining and experiencing ideal harmony—pragmatism can render good service to humanistic philosophy.

The article 'Pragmatism as a Philosophic Method,' by Dr. King, is a critical examination of Professor James's statement of the matter. Dr. King calls attention to the necessity of recognizing the limitations which the real world sets to the workability of theories and concepts and to the satisfaction of needs. He objects that pragmatism seems to conceive thought as in some way external to the world of action and to the world of things. Pragmatism is strong in its assertion of a connection between thought and action, weak in its account of the nature of this connection. It emphasizes effects as tests of validity or truth, but fails to give us a criterion for distinguishing good and bad effects. In order that it may distinguish different kinds of effects pragmatism 'must be able to determine what sort of an objective system it is most desirable to have perpetuated.' The test of feasibility can not be applied off-hand. Pragmatism must make a preliminary investigation of what it is we can rightfully assert to be real, and it must recognize that thought is an organic and functional part of experience as a whole and the functional and organic relations of a particular thought can be determined only by genetic and sociological treatment.

Dr. King's criticism is pertinent and acute so far as it goes, although it perhaps hardly makes due allowance for the fragmentary form of Professor James's utterances; Dr. King's own indication of the 'functional' view of knowledge as supplying the deficiencies of pragmatism is rather vague.

It does not fall within the scope of the present article to discuss in detail the functional conception of thought advocated by Professor Dewey and his disciples.[10] But there are certain presuppositions common to this view and to pragmatism which may be briefly noticed. First is the notion of 'harmony' or 'integration' of experience as the end which it is the whole business of thought to further. "The test of validity of idea is its function or instrumental use in effecting the transition from a relatively conflicting

[10] 'Studies in Logical Theory.'

[11] 'Studies in Logical Theory,' p. 75.

experience to a relatively integrated one.''[11] ''All the distinctions of the thought-function, of conception as over against sense-perceptions, etc. . . . all these distinctions come within the thought situation as growing out of a characteristic antecedent typical formation of experience; and have for their purpose . . . the restoration of a deliberately integrated experience from the inherent conflict into which it has fallen.''[12] ''Life proposes to maintain at all hazards the unity of its own process. Experience insists on being itself, on securing integrity even through and by means of conflict.''[13] Which is all very suggestive as a genetic theory of thought, but as a criterion and account of the meaning of truth this sort of thing seems to me very vague. It fails to account for *universality* and *objectivity* as marks of truth. Moreover, we must not play fast and loose with such notions as 'integration,' 'harmony,' 'social utility,' etc. An experience intellectually integrated has a very different character from an experience esthetically integrated. Both involve feelings of harmony. But the *nuances* of emotional coloring and the constitution of the resultant experiences differ as the actual processes and methods of integration have differed. And it is just the business of logic to discover the *differentiæ* of intellectual integration. It can hardly be admitted off-hand that the sole criteria of successful thinking are social and individual utility, etc. We must distinguish *genetic process* and *end* here as in the parallel case of the evolution of art. It is doubtless true in both cases that the mental processes involved are in their origin and development largely stimulated by social needs, and that the results have social utility. But it does not follow that science and art have not at their higher levels *inherent* significance. We may say that truth has no meaning apart from the experience of selves. But it does not follow that truth is without inherent worth and objective standing and that it is a *mere instrument* of easy transition to peace and harmony in an over-intellectual experience. The second presupposition common to Messrs. Dewey and Schiller seems to be the evolving nature of reality. ''Since reality must be defined in terms of experience, judgment appears accordingly as the medium through which the consciously effected evolution of reality goes on; that there is no reasonable standard of truth (or of success of the knowing function) in general, except upon the postulate that reality is dynamic or self-evolving.''[14] *Now the reality of an evolution in human experience is one thing and the evolution of reality in its totality is a very different thing.* Granted that there is a real significance in our discovery of truth and attainment of goodness, etc.,

[12] *Ibid.*, p. 47.

[13] 'Studies in Logical Theory,' p. 81.

[14] 'Studies in Logical Theory,' preface, p. x.

considered as evolutionary processes, nevertheless it seems to me to be essential to the notion of truth (as more than mere relativity and change in individual experiences, for 'society' does not have experiences) to hold that it is *timeless*. And I can not see what meaning there can be in a *perfect reality* which is in evolution as a whole. Either all is flux and then 'integration' and truth and goodness and beauty are purely relative and shifting, or there must be a real principle which is beyond change. In the latter case our criteria and specific contents of truth, although not necessarily final and complete, may yet have a real validity. It is not necessary that we should know 'the absolute completely in order to have valid knowledge. But if there is nothing more than the relativity and flux of individual experiences, whether taken singly or in sum, there can be no absolute truth or perfection to aim it and I see no meaning in talking about 'reality' at all. It may be our lot to evolve but slowly towards the comprehension and possession of a permanent principle of reality, but unless we can presuppose such a reality as a self-existent end our successive mental acts, whether theoretical or practical, seem devoid of any *inherent* and *final value*. And *now* in the midst of the struggle either *our* evolving, 'integrating' and shifting experiences are the only realities so-called, or else there is implied in the very zest and seriousness of our efforts a reality which is *not* in evolution. Does not the former hypothesis remove the very nerve of the endeavor after the true and the good? I merely raise these questions in order to insist that pragmatism and the functional theory involve problems in regard to reality that can neither be brushed aside as ontological and antiquated or settled off-hand by the evolution method.

J. A. LEIGHTON.

HOBART COLLEGE.

## REVIEWS AND ABSTRACTS OF LITERATURE

*Educational Psychology.* EDWARD L. THORNDIKE. New York, Lemcke and Beuchner, 1903. Pp. 177.

Those who have been used to seeing 'educational psychologies' that contain some extracts of psychology and many infusions of pedagogical maxims and methods will probably be surprised when they open this book. Those, however, who have read the author's 'Notes on Child Study,' will read the book with some sense of familiarity and will realize that it is the same material enlarged, deepened and more definitely organized with reference to scientific methods of investigation and interpretation. It is not a philosophy of education, but the outline of an inductive science which is to be developed by extensive experimental investigations and the application of exact mathematical formulæ.

He first states that educators *must* judge of the amount and kind of changes produced in minds and bodies by the several means used, and shows that it is possible in many cases to substitute exact measurements of such changes for the indefinite and unreliable judgments employed, and illustrates how the 'average,' 'mean,' 'mode' and 'average deviation' of a series of measurements may be calculated. He then illustrates by diagrams how closely the theoretical law of the distribution of traits is approximated by the results of various measurements of mental and physical characteristics, and emphasizes the importance of average deviation being given in order that results may be correctly interpreted.

The problem of the relationship between various mental traits is then outlined, the methods of computing them given and the results of experiments quoted, showing that in many cases the common opinions and theories of the correlation of mental traits are without foundation; *e. g.*, ability in algebra and ability in geometry are only slightly related, while ability in science and ability in English are more closely correlated than ability in Latin and ability in English.

In discussing original and acquired traits the principal facts quoted are from Galton's 'Study of Twins,' and the most startling conclusion is that "The one thing that educational theories of to-day seem to place as the foremost duty of the school—the development of powers and capacities—is the one thing that the schools or any other educational force can do least."

In the following chapter abundant proofs are quoted from Galton, Pearson and others showing that mental traits are inherited, and evidence is given against the theory that acquired traits are inherited in any appreciable degree. The next chapter, in which Rice's experiments in spelling and arithmetic are extensively quoted, attempts to show that the influence of environment is not great. However much this may be doubted, the following statement will be very much appreciated by those beginning to view education from the broader standpoint of biological development. "The work of education is, (1) To supply the needs of the brain's healthy growth and to remove psychological impediments to it; (2) to provide stimuli to desirable mental variations and to withhold stimuli from the undesirable; (3) To make the outcome of desirable activities pleasurable and to inhibit their opposites by discomfort."

The chapter on the influence of special forms of training upon more general abilities is a more complete elaboration of the authors' already published view that special training has no effect on general ability in the sense in which it has been claimed. A brief chapter on the influence of selection effectually shows how interpretations of data are often erroneous because the facts are obtained from selected cases; *e. g.*, arguments for the value of college training lose much of their force when we recollect that college students are a selected class of youths and not representatives of the masses. The influence of selection is also made much of in the chapters on changes in mental traits with age and on sex differences in mental traits, with the result that doubt is thrown on nearly all conclusions of investigators in these lines.

The chapter on exceptional children treats in a very thorough and suggestive way exceptional superiority, exceptional defects, general mental defects, exact measurements of exceptional children, moral defectives, exceptional rates of growth, precocity, slow growth and arrested development, while the succeeding chapter has an equally critical discussion on the relationship of mental and physical traits. The chapter on 'Broader Studies of Human Nature' is in the main a criticism of studies made by the *questionnaire* method, which the author regards with little favor largely because the data are usually unreliable, since the answers frequently involve opinions rather than facts and are often suggested by the questions, while the answers are by selected individuals and frequently in a form not suited to quantitative treatment.

In the last chapter, on the problem of education as a science, it is stated that a theory of education must answer these two questions: 'What ought people to do?' and 'How shall we change them from what they are to what they ought to be?' The first is a matter of ideals, while the second, to which the author devotes his whole attention, is a question of facts. He says: "Since groups of variable facts will be the material it studies, statistics will everywhere be its handmaid. The chief duty of serious students of the theory of education to-day is to form the habit of inductive study and learn the logic of statistics. Long after every statement about mental growth made in this book has been superseded by a truer one the methods which it tries to illustrate will still be profitable and the ideals of honesty in statistical processes by which I hope it has been guided will still be honored."

This quotation is in itself a good characterization of the whole book. It is the work of a genuine scientific educator. Much of it is critical and negative while the positive though tentative conclusions show reactions against current theories. The effect will be to discourage some enthusiastic young students of education and to antagonize older theoretical educators, while those thoroughly imbued with the spirit of scientific investigation will be stimulated to more careful work in this promising but complex field of scientific research.

This book with its hitherto unexampled emphasis of exact measurements in the study of education marks our entrance upon a new epoch in the development of educational theory and practice. It will surely be a powerful influence in checking the loose theorizing and hasty generalizing that have been so common in educational literature, and it will be an important factor in promoting more accurate thinking and painstaking investigations.

On the other hand, Dr. Thorndike seems to expect more from the methods of exact experiment than do many others who are in complete sympathy with the purposes and methods of this book. We already have an almost perfect science of bridge-building founded on exact measurements, but there is scarcely a hope that we shall have even in the distant future such a perfect science of poetry or picture building, and the same is true of mind and character building. Education must be carried on for many years before it can be based to any considerable extent on exact measurements, and such basis may never be supplied in some lines.

In the meantime we must depend upon unscientific investigations and inexact estimates which we should be ready to replace by exact measurements as fast as such data are supplied us. The present writer believes that the large amount of time devoted to the collection and interpretation of educational data by more or less unscientific methods is not wholly wasted. It has prepared the way for the more exact work advocated by Dr. Thorndike and a great deal has been learned by every investigator that can not be expressed in the form of exact measurements. In studying young children especially, more depends upon the tact and insight of the investigator than upon his instruments and methods. Even imperfect data crudely interpreted are also better than antiquated theory mechanically applied, hence the numerous crude studies of children that have been made within the last decade have not been without their value in this transition period. It is to be hoped, however, that Dr. Thorndike's book will result in much less careless work by those who claim to be making scientific investigation of educational problems.

E. A. KIRKPATRICK.

STATE NORMAL SCHOOL,
FITCHBURG, MASS.

*Kant's Transcendental Idealism and Empirical Realism.* I.–II. C. M. WALSH. *Mind,* October, 1903, pp. 454–472, and January, 1904, pp. 54–71.

In the words of the author, "This paper does not advocate the adoption of the transcendental realism rejected by Kant. It attempts merely to show that in rejecting this theory and in setting up his own Kant did not have clear and distinct ideas about the subjects of which he was treating. It attempts to show that Kant was confused in his theory of empirical realism, or conception of an outside phenomenal world, which his critics have generally been willing to accept, as much as in his conception of the things in themselves, which his critics have generally repudiated." (*Mind,* January, 1904, p. 71.) There is no division of the topic corresponding to the two papers, and they leave the reader somewhat confused by the monotony of detail. And there is altogether too much verbal wrangling over 'phenomenon' and 'thing in itself.' But the main contention is forcibly and effectively stated. Kant's doctrine as a whole is neither subjectivistic nor realistic enough to be self-consistent. His refutation of Berkeleyan idealism, and his frequent references to the unity and externality of the natural world, do not agree with his supposition that this world is indispensably conditioned by percipient beings and the formative principles that belong to their nature. The latter is a self-consistent doctrine. We may suppose a thing-in-itself to determine experiences in percipient beings, and to persist as the ground of possible experience where these experiences themselves have lapsed. But in that case, instead of one nature, we have as many natures as percipient beings, with a certain identity of ground and similarity of content. This would be the very 'material idealism' that Kant so strongly disclaimed. Or, as is stated at the opening of the second paper,

there are two possible doctrines for the title 'Empirical Realism.' The first of these, a pluralistic subjectivism, is not realism, and the other is a type of transcendental realism, and hence not empirical.

The author is to be credited with the selection of the most interesting problem of interpretation that arises in connection with the 'Critique.' And the above objection is, in its generality, well taken. The reviewer feels, however, that the elaboration of the objection is, in the first place, unsatisfactory in the matter of emphasis. It is most fair and most enlightening to construe the 'Critique' in terms of that which is most distinctive in it. Such is not the case with the 'Æsthetic,' which is an earlier work only imperfectly assimilated to the central doctrine, but is the case rather with the 'Transcendental Deduction of the Categories.' In that discussion the fundamental doctrine is that of *the objective (or universal and necessary) intent of the least experience.* The Transcendental Unity of Apperception is virtually the *knower* in all experiences that can be reported at all. But Kant denies that such a knower may itself be known as other than a logical conception, though it gives form to all knowledge, and distinguishes real experiences from the manifold of the internal sense. Indeed, in exercising this corrective function it attaches itself in Kant's mind to the very subjectivity in contradistinction to which it was defined. So Kant hovers between subjective idealism and realism, and plays into the hands of absolute idealism. But while it is certainly true, as the author maintains, that we have here to deal with an equivocal doctrine, to the reviewer it seems more true to Kant (and be it said to his credit) to begin with his empirical realism, or the unity and objectivity of the world of organized experience, and to show that subjectivism is incompatible with it, rather than to regard the former as an intrusion upon the latter.

In the independent discussion in the latter part of the second paper, the author recognizes Kant's close approach to a doctrine which he calls 'Phenomenal Realism.' Kant did not maintain a realistic doctrine, but 'brought forth only a muddled and ambiguous conglomeration which, when clarified, resolves itself into one or another of the older views' (p. 71). As a second criticism the reviewer would urge the inaccuracy and injustice of this depreciation of Kant's originality. The subjective strands of his weaving are not, it is true, such as to place him distinctly in advance of Berkeley or Leibniz. And his realism is closely similar to that of Plato, Berkeley (in his doctrine of God and nature) and Malebranche. But this doctrine of the function of the category in determining the unity of a realm or system of truth, with the application of this doctrine to nature and its divisions, is a philosophical classic. The best philosophy of nature since the time of Kant has been built upon this foundation. And this same conception of the constructive and constitutive reality of categories lies at the root of absolute idealism, a movement which testifies to Kant's originality even when it misconceives him and compounds error.

RALPH BARTON PERRY.

HARVARD UNIVERSITY.

*Caractère de l'Histoire.* A. D. XÉNOPOL. *Revue Philosophique,* January, 1904, pp. 29–45.

M. Xénopol insists that there are no historical laws, only historical series, developments from a nucleus to a result. For laws imply eternal repetition; while history deals only with individual facts, facts that, though possessing general and collective elements, can never be repeated. The sociologist is rebuked for attempting to bring the material of history under laws of *development,* an attempt that tends to 'destroy the differential element of the several historical series.'

His view accords in general with that of Rickert. The latter's reference to continuity as the principle of connection in history is overlooked; it would have been of service in the discussion. The individuality that Rickert recognizes as an ultimate character of reality, M. Xénopol would base on a 'croyance' that certain facts are such that nothing just like them will occur again, the uniqueness, in some cases, being merely their places in time. M. Xénopol renders a service, I think, in transcending that limitation of history to the acts of men in society which the convenience of academic administration seems to suggest; a limitation that results in confusing the aim of the historian with that of the sociologist, moralist or artist. Neither Rickert nor Münsterberg, *e. g.,* seems to allow for the historians of strata and of animal forms.

The historian obviously treats the past as past, and as real in spite of its pastness; from this one fact the concept of history can, I believe, be developed. As memory proper attaches to some present self, so historic pasts belong to some present evidence or fulfillment. As the present, coexistent world of evidence is somehow common to all, so history is 'objective.' It is built up solid and unyielding by the intersection of many past actions, which are measured and interrelated by reference to that one action whose 'counting' is time. History extends indefinitely backwards, but moves always to the present, be that one or many. Its content is a continuous action, like that in memory, regardless of mechanical explanations. But scientific laws suggest the action of which the evidence is the fulfillment, and confirm or reject hypothetical action; though the final test is the 'fact,' the interrelation of the various actions thus posited.

The sociologists have annoyed M. Xénopol; but it is hard to sympathize with him. He admits the application of 'laws of development' to primitive human history; why not apply them as far as we can? Why not set as our *ideal* the mechanical interpretation of all history? The scientist always *starts* from history. The physicist measures a past action by means of present evidence. The past is no mere memory, but true, 'objective' history, or his laws would have no validity. He constructs his machines ideally; but the verification of his conclusion is again to be found in a history, a past of which there is evidence, not a mere memory. He must be able to interpret that history mechanically. The orator is satisfied with his 'science' when applause and breathless silence have met his efforts according to calculation. And so the sociologist starts from history and comes back to it. History by its

ideal of continuity is distinguishable from all scientific constructions of and in it. It grows forever; and must ever have a new fact as a problem for the scientist.

PERCY HUGHES.

COLUMBIA UNIVERSITY.

*Herbert Spencer.* H. HÖFFDING. *Tilskueren,* January, 1904, pp. 1–8.

Mr. Spencer, says Professor Höffding, exhibits the empiricism and realism common to the English school of thinkers, though he has sought to widen the horizon, and in so doing has introduced an essential change. The doctrine enunciated in the 'Principles of Psychology,' that the capacities and characteristics of the entire human race as exhibited in the life of the individuals constituting it, must be explained, not from the conditions surrounding the individual alone, but must and can be explained out of the external conditions under which the development of the race has taken place, will insure Mr. Spencer a permanent place in the history of thought. The three volumes of his 'Essays' probably constitute a more permanently valuable contribution than the series of systematic works, which latter are often mere schematic outlines, projected beforehand, and filled in afterwards. His critics are probably right in designating the reconciliation of religion and science in the *First Principles* as illusory and inconsistent. The most important objections which can be urged against him are of an epistemological character. His zeal to compile, systematize and deduce often drives him into an uncritical attitude. His main interest lies in presenting the idea of evolution in its strongest light, and this causes him to treat inadequately many problems, especially the problem of the validity of knowledge and its final presupposition, and the problem of the relation between the psychical and the physical. But the main results of Spencer's analysis of the development idea will undoubtedly be of permanent significance. An exhaustive consideration of the causal concept will in time demonstrate that a similar inquiry must be directed to the related concept of development. Spencer has pointed out the close connection between these two ideas, and his investigation of the concept of development will always remain an important contribution to the doctrine of the categories.

DAVID F. SWENSON.

UNIVERSITY OF MINNESOTA.

*Ueber die stereoskopische Wirkung der sogenannten Tapetenbilder.* BERNHARD FUCHS. *Zeitschrift für Psychologie und Physiologie der Sinnesorgane,* XXXII., 2, pp. 81–86.

This article presents three figures which can be used for the purpose of securing binocular fusion when the eyes are converged either in front of the page or behind it. Nothing essentially new appears in the discussion. The author emphasizes the well-known fact that if there is the slightest lack of uniformity in the repeated patterns, the different parts of the figure will seem to lie at different levels, whereas, the more uniform the drawings, the more nearly the figures will seem to lie at the same level.

CHARLES H. JUDD.

YALE UNIVERSITY.

*Blickrichtung und Grössenschätzung.* ALFRED GUTTMENN. *Zeitschrift für Psychologie und Physiologie der Sinnesorgane,* XXXII., 5, pp. 333–345.

The author has determined under experimental conditions the difference in apparent size of objects at the level of the eyes and at an elevation of forty degrees above this level. Two series of measurements were made. In both series an ordinary perimeter served to hold the objects at equal distances from the eye. First, two adjustible lines at the level of the eyes were separatel by means of a screw until they seemed to be just as far apart as were two similar lines placed at an elevation of forty degrees. The same experiment was repeated with the upper lines made adjustable. Second, colored disks made adjustable by means of diaphragms were compared. It was found that objects at forty degrees elevation appeared on the average about three per cent. smaller. It was noted also that the movement of the eyes upward produced a more pronounced effect than a corresponding movement downward.

CHARLES H. JUDD.

YALE UNIVERSITY.

---

## JOURNALS AND NEW BOOKS

PFLUGER'S ARCHIV FÜR DIE GESAMTE PHYSIOLOGIE. September–November, 1903, Band 99, Heft 3–10. *Das Talbot'sche Gesetz und die Dauer der Lichtempfindungen (pp. 95–115):* GÖTZ MARTIUS. – In answer to Marbe's criticisms, the author discusses at length the relation between his earlier experiments on intermittent light stimulations and Talbot's law. There are no new experiments reported. *Ueber die Wirksamkeit der Nerven auf das durch Ringer'sche Lösung sofort oder mehrere Stunden nach dem Tode widerbelebte Säugethierherz (pp. 245–252):* Also, *Sind zwischen dem extracardialen Theil der centrifugalen Herznerven und der Herzmuskulatur Ganglienzellen eingeschaltet? (pp. 253–263):* H. E. HERING. – Monkeys' hearts were excited to regular action by means of Ringer's solution for a considerable period after the death of the animal; indeed, after the tissue had twice been kept over night in a frozen condition. It was found that the vagus functioned for about six hours after the treatment began, while the accelerator nerve functioned for about fifty-four hours. Analogous experiments on sympathetic cells which also seem to stop functioning early, justify the conclusion that the nerve cells in the heart are essential to the action of the vagus, but not to the action of the accelerator. The cells in the heart are, accordingly, not the centers for that organ's automatic action. *Die Bedeutung der Salze der Ringer'schen Lösung für das isolirte Säugethierherz (pp. 264–318):* E. GROSS. – Reports in detail the effects produced by the various salts which go to make up Ringer's solution when these salts are applied in different combinations to the hearts of mammals. *Ueber Nervenreizung durch Induktion (pp. 357–362):* M. GILDEMEISTER. – A nerve was placed so as to become the

secondary coil in an induction circuit. The muscle attached to this nerve showed contractions when the current was broken, but not when it was made. *Ueber die Wirkung der Labyrinthe und des Thalamus opticus auf die Zugcurve des Frosches (pp. 363–384):* GUSTAV EMANUEL. – The muscle tonus was tested by suddenly pulling down the legs of a frog by means of weighted levers which were so arranged as to record by their movement the elasticity of the muscles. The curve secured when the frog is normal differs in a characteristic way from that which is produced when the central nervous system of the frog is destroyed. The same effect which is produced by extirpating the whole nervous system may be produced by extirpating merely the thalamus. Again, the same effect is produced by destroying the labyrinth of the ear. This shows the non-auditory function of certain parts of the labyrinth (Ewald), a motor function in the thalami, and finally a probable connection between the thalami and the ear nerves. *Ueber die Einwirkung verschiedener einatomiger Alkohole auf das Flimmerepithel und die motorische Nervenfaser (pp. 481–512):* HANS BREYER. – Three distinct stages of change in the epithelial cells and motor nerve fibers can be demonstrated when they are acted upon by weak solutions of the alcohols. The first stage is one of depression, the second one of excitation, the third one of prolonged depression. Author concludes that the second period is one of true stimulation.

ARCHIV FÜR DIE GESAMTE PSYCHOLOGIE. April–June, 1903. Band I., Heft. 1–4. *Zur Einführung (pp. 1–8):* E. MEUMANN. – Modern psychology owes its methods and data, on the one hand, to introspective and philosophical studies, and, on the other, to physiological and experimental investigations. This double origin at first led to conflict within the science. Gradually a general discipline capable of being at once experimental and introspective has grown up. This general discipline is capable of a variety of useful applications. The *Archiv für Gesamte Psychologie* dedicates its services to the promotion of all phases of this general science. *Über Ermüdungsmessungen (pp. 9–30):* EMIL KRAEPELIN. – A critical rejection of most of the work on fatigue, especially the work that has been done on school children in large groups. We must have a more careful examination of individuals. This can be best made, not by resort to one kind of fatiguing work to the exclusion of others, but by the measurement of what seems to be a thoroughly characteristic individual trait, namely, the most favorable pause for recovery from fatigue. Some pauses are short for full recovery, others unnecessarily long. The most favorable pause furnishes the desired quantity for the comparison of individuals and the determination of fatigue. *Über den Einfluss von Nebenreizen auf die Raumwahrnehmung (pp. 31–109):* HAYWOOD J. PEARCE. – The article reports briefly a series of experiments in which the localization of a tactual, auditory or visual stimulus is influenced by the presence of a like stimulus near to it. This secondary stimulus affects localization at first by a kind of contrast and afterward by a kind of attraction. The second part of the article reports in detail

experiments which show that a tactual illusion similar to the Müller-Lyer illusion for vision, exists. Quantitative determinations of this tactual illusion are given. *Über die Möglichkeit einer Quantität der Tonempfindung (pp. 110–147):* R. GAETSCHENBERGER. – An effort to demonstrate in a purely theoretical way the existence of a characteristic of physical sound-waves which varies with the size of vibrating surfaces, and may accordingly be the physical condition of an attribute of original extensity in auditory sensations. The form of vibration of an air particle can not be described as an oscillation in a sine curve with its middle point at the original point of rest; for the vibrating body does not draw the air particle back (as ordinarily assumed in the rarified phase of the wave). The center of oscillation is determined by the form of the positive impulse imparted to the air, and this in turn depends upon the size and character of the sounding body. *Zur Psychologie der Aussage (pp. 148–183):* ARTHUR WRESCHNER. – An effort to supplement Stern's discussion of the memory for pictures. A picture (reproduced in the text) was shown to a number of subjects. An elaborate account is given of the various degrees of accuracy exhibited in the description of all the different objects in the picture. The results are, from the nature of the case, incapable of any very systematic statement. *Besprechung. Roetteken's Poetik (pp. 1–6):* A. SCHEUNERT. *Referate. Fortschritte auf dem Gebiete der Erforschung der kindlichen Sprache in den Jahren 1898–1902 (pp. 7–20):* HERMANN GUTZMANN. *Einfühlung, innere Nachahmung, und Organempfindungen (pp. 185–204):* THEODOR LIPPS. – The well-known position of the author, that esthetical appreciation is due to the fact that we read into objects human strivings and satisfactions, is here defended against the interpretation that this appreciation depends on sensations of muscular strain which arise from involuntary movements made during the examination of the object. The actual muscular tensions thus aroused are not significant. The attitude of esthetical sympathy precedes and outweighs any bodily sensations. *Differenztöne und Konsonanz (pp. 205–275):* FELIX KRUEGER. – The first of a series of articles. See notice under same title below. *Ueber Einzel- und Gesamtleistung des Schulkindes (pp. 276–416):* AUGUST MAYER. – A series of tests in taking dictation, in mental arithmetic, and in filling out sentences according to Ebbinghaus's method, were made by the author on children of the 'Volksschule.' The results are reported with minute detail, every possible form of treatment being resorted to. The conclusions are favorable to class instruction and class work as compared with individual teaching. *Referate. Fortschritte auf dem Gebiete der Psychophysik der Licht- und Farbenempfindung (pp. 21–60):* WILHELM WIRTH. *Untersuchungen zur Ökonomie und Technik des Lernens (pp. 417–526):* CHRISTO PENTSCHEW. – An article reporting experiments on the learning by heart of (*a*) various groups of nonsense syllables, and (*b*) significant sentences. The tests were made to determine whether it is more economical to learn the matter in short sections, or by repetitions each time of the whole matter. Results favored very decidedly the method of learning by wholes. In point of repetitions required, in point of ease and accuracy of recollection and usually in point of time,

the method of learning by wholes is preferable. *Über die Frage des Abhängigkeitsverhältnisses der Logik von der Psychologie (pp. 527–544):* E. DÜRR. – A critical refutation of Husserl's and Schuppe's contention that there is a fundamental distinction between psychology and logic. The argument deals chiefly with the question of the relation between objects in the scientific sense of this term, and consciousness of objects. The author finds it impossible to deal with this distinction from a purely logical point of view, and therefore criticizes the writers above mentioned. *Referate. Fortschritte auf dem Gebiet der Völkerpsychologie, Kultur- und Gesellschaftslehre, 1902 (pp. 61–67):* A. VIERKANDT. *Referate. Die neueren Erfahrungen über die Sprachstörungen des Kindesalters 1898–1902 (pp. 67–89):* HERMANN GUTZMANN. *Besprechung. Uexküll's Im Kampf um die Tierseele (pp. 90–92):* WILHELM AMENT. *Differenztöne und Konsonanz (pp. 1–80):* October, 1903, Band II., Heft 1, FELIX KRUEGER. – A second paper continuing the discussion begun in the second number of Band I. The whole is an elaborate constructive and critical treatment of the theory of consonance and dissonance, based upon the author's earlier investigations on difference tones. Difference tones are more numerous than has been commonly recognized, and they are different in quality and feeling tone from primary tones. This unique character of combination tones is more significant in the final explanation of consonance and dissonance than are the differences in the number and relations of overtones. A third article containing the final conclusion is to appear in a latter number of the *Archiv. Wechselwirkungen beim Ursprung von Zauberbräuchen (pp. 81–92):* A. VIERKANDT. – A brief analysis of the psychical processes which lend to superstitions and magic their power. Such processes are not of a logical type, but are emotional suggestions. They arise sometimes out of strong personal desires, sometimes out of community convictions. *Besprechungen. Lipp's Einheiten und Relationen (pp. 1–10):* ARTHUR WRESCHNER. *Clifford's Von der Natur der Dinge an Sich (pp. 10–13):* PAUL LINKE. *Longinos's Ueber das Arhabene (pp. 13–14):* E. MEUMANN. *Beiträge zur Psychologie der Aussage (pp. 14–15):* E. MEUMANN. *Weygandt's Atlas und Grundriss der Psychiatrie (pp. 15–17):* ARTHUR WRESCHNER. *Bechterew's Die Energie des lebenden Organismus und ihre psycho-biologische Bedeutung (pp. 17–20):* BRUNINGS.

Delanne, Gabriel. (Translated by H. A. Dallas.) *Evidence for a Future Life.* New York: Putnam. 1904. xvi + 264 pp.

Erdmann, Benno. *Historische Untersuchungen über Kant's Prolegomena.* Halle: Max Niemeyer. 1904. v + 144 pp. 3.60 m.

Féré, Ch. *Travail et Plaisir: Nouvelles études expérimentales de psychodynamique.* Avec 200 fig. Paris: Alcan. 1904. 12 fr.

His, W. *Die Entwickelung des menschlichen Gehirns wärend der ersten Monate.* Mit 115 Abb. Leipzig: Hirzel. 1904. 8vo. 12 m.

Kersey, J. A. *The Ethics of Literature.* New York: Twentieth Century Press. 1904. iii + 572 pp. $1.50.

Natorp, Paul. *Allgemeine Psychologie.* Marburg: N. G. Elvert'sche Verlagsbuchhandlung. 1904. 63 pp. 1 m.

Paulhan, Fr. *La fonction de la mémoire et le souvenir affectif.* Paris: Alcan. 1904. 2 fr. 50.

Pillon, F. *L'année philosophique, Quatorzième Année.* Paris: Alcan. 1903. 12 fr. 50.

Regnaud, P. *L'origine des idées, expliquée par la Science du langage.* Paris: Alcan. 1904. 1 fr. 50.

Roupert, J. G. *Modern Spiritism: A Critical Examination of its Phenomena, Character and Teaching in the Light of Known Facts.* London: Sands & Co. 1904. 5 s.

Shaler, N. S. *The Citizen: A Study of the Individual and the Government.* New York: A. S. Barnes & Co. 1904. viii + 346 pp. $1.40.

Sourian, Paul. *La beauté rationelle.* Paris: Alcan. 1904. 10 fr.

Swarte, Victor de. *Descartes, directeur spirituel. Correspondence avec la princesse Palatine et la reine Christine de Suède.* Paris: Alcan. 1904. 4 fr. 50.

Velzen, H. Theoder van. *System des religiosen Materialismus.* (*I. Wissenschaft der Seele.*) Leipzig: O. R. Reisland. 1903. x + 467 pp. 9 m.

---

## NOTES AND NEWS

THE second International Congress of Philosophy will open on Sunday, the fourth of September, 1904, in the Aula of the University of Geneva, at two o'clock in the afternoon, and continue until Thursday evening, the eighth of September. Besides general sessions of the congress, there will be sessions of sections under the direction of sectional presidents, and the sections will be subdivided, if necessary. The general sessions will be occupied exclusively with the discussion of questions fixed in advance by the Committee of Organization, and introduced by appointed speakers. There will be no sessions of the sections during the general sessions. There will be five sections: history of philosophy; general philosophy and psychology; applied philosophy (ethics, esthetics, sociology, philosophy of religion, philosophy of law); logic and philosophy of science; history of science. English, French, German and Italian are recognized as the official languages of the congress. All communications relative to the congress should be addressed to the general secretary, M. le Dr. Ed. Claparède, 11 Champel, Geneva. – The officers of the Congress are the following: PERMANENT INTERNATIONAL COMMITTEE. – *German Language:* Messrs. Barth (Leipzig), Cantor (Heidelberg), Mach (Wien), Riehl (Halle), Schroeder (Karlsruhe), Stein (Berne). *English Language:* Messrs. Baldwin (Johns Hopkins), Carus (Chicago), Ladd (New Haven), MacFarlane (Pennsylvania), Ritchie (St. Andrews), Russell (London), Schurmann (Ithaca), Stout (Oxford). *French Language:* Messrs. Bergson (Paris), Boutroux (Paris), Couturat (Paris), Dwelshauvers (Brus-

selles), Gourd (Geneva), Leon (Paris), Mansion (Gand), Remacle (Hasselt). *Italian Language:* Messrs. Calderoni (Florence), Cantoni (Pavie), Peano (Turin), Vailati (Come). *Scandinavian Languages:* Messrs. Aars (Christiania), Geijer (Upsal), Mittag-Leffler (Stockholm). *Slavic Languages:* Messrs. Drtina (Prague), Iwanovski (Moscow), Kozlowski (Varsovie), Vassilief (Kazan). COMMITTEE ON ORGANIZATION. – *Honorary President:* Ernest Naville, Professeur honoraire de l'Université de Genève, Associé étrange de l'Institut de France. *President:* J. J. Gourd, Professeur à l'Université de Genève. *Vice-President:* Adrien Naville, Professeur à la Faculté des Lettres de Genève. – Th. Flournoy, Professeur à la Faculté des Sciences de Genève. *Treasurers:* P. Duproix, Professeur à la Faculté des Lettres de Genève. – H. Kündig, Editeur. *Secretaries:* Ed. Claparède, Dr. en médecine, Rédacteur des Archives de Psychologie. – Ch. Werner, Licencié ès Lettres. – X. S. Combothecra, Dr. en droit, Privat-docent à la Faculté de Droit de Genève.

DOCTOR BENNO ERDMANN, Professor of Philosophy at the University at Bonn, has been called to Tübingen.

AT the Kant Centenary at the University of Königsberg Professor Rudolf Stammler, the present Rector of the University of Halle-Wittenberg, received the degree of Ehrendoctor der Philosophie for being the first scholar to apply Kantian epistemological methods to social science and theoretical jurisprudence. The honorary degree of Doctor of Philosophy was also conferred upon Doctor Edward Caird, the Master of Balliol.

THE centenary of Kant's death was commemorated in St. Louis by a largely attended public meeting held in the rooms of the Ethical Society. Addresses on various aspects of Kant's work were delivered by Mr. W. L. Sheldon, Professor Frank Thilly, Professor A. O. Lovejoy, Rev. G. A. Dodson, Ph.D., Rev. J. W. Lee, D.D., and Mr. F. Louis Soldan. A subscription for the fund to be donated to the maintenance of *Kantstudien* was opened and something more than $100 was contributed by citizens of St. Louis and vicinity.

DOCTOR HUGO MÜNSTERBERG, Professor of Psychology at Harvard University, and Non-resident Lecturer in Psychology at Columbia University, has just completed at Columbia a course of seven lectures on the following subjects: (1) The Aims and Limits of Psychology; (2) Consciousness; (3) Mind and Brain; (4) Sensations; (5) Perception; (6) Feelings; (7) Will. On the evening of March 7th Professor Münsterberg was present as the guest of the Psychological Journal Club of Columbia. The meeting was devoted to a discussion of the philosophical and psychological doctrines outlined in his lectures.

THE Southern Society for Philosophy and Psychology was organized February 23d in Atlanta, Ga. Its officers are:—*President:* Professor J. Mark Baldwin, Johns Hopkins University; *Secretary:* Professor Edward Franklin Buchner, University of Alabama; *Council:* the President, Secretary and Doctor William T. Harris, Washington, D. C., Mr. Reuben Post Halleck, Louisville, Ky., and Professor A. Casewell Ellis, University of Texas. The aim of the organization is to promote the welfare of philosophy and psychology in Southern institutions.